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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/624,056	07/21/2003	James R. Bond	DP-308195	5929

7590 05/18/2005  
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EXAMINER

BEHNCKE, CHRISTINE M

ART UNIT PAPER NUMBER

3661

DATE MAILED: 05/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/624,056

Applicant(s)

BOND ET AL.

Examiner

Christine M. Behncke

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 21 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-71 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 5, 30, 34, 35, 43, 44, 46, 49 and 52 is/are rejected.
- 7) ☒ Claim(s) 2-4, 6-29, 31-33, 36-42, 45, 47, 48, 50, 51 and 53-71 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 July 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 7/21/03 & 3/12/04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### **DETAILED ACTION**

This office action is in response to the application filed July 21, 2003, in which claims 1-71 were presented for examination.

#### ***Specification***

The disclosure is objected to because of the following informalities:

Page 15, line 12: "transmission 28" should be changed to --transmission 82--.

Page 17, line 6: "master cylinder 12" should be changed to --master cylinder 62--.

Page 17, line 9: "brake apparatus 100" should be changed to --brake apparatus 110--.

Appropriate correction is required.

#### ***Drawings***

The drawings are objected to because Figure 7 refers to elements RDP entry point and term and an RBP rate, which are not described in the specification. Page 17 of the specification refers to only DRP and RPC entry points and terms. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and

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where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency.

Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Objections***

**Claims 35, 36, 40 and 41** are objected to because of the following informalities: both claims lack antecedent basis for the limitation "the fluid receiving" unit/element. In Claim 30, no fluid receiving element is claimed only a fluid *storage* element.

**Claims 44 and 47** are objected to because of the following informalities: the claims lacks antecedent basis for the limitation "the fluid receiving element". In Claim 43, no fluid receiving element is claimed only a fluid *storage* element.

Claims 53-71 are objected to because of the following informalities:

Independent **claim 53** includes the limitations of calculating an RPC entry point and a RPC term as functions of vehicle speed and rear wheel speed. However, it is unclear what these calculated functions precisely are and how they are calculated. In the specification and drawings, the only definitions for the RPC functions are that they are functions of vehicle speed and, for the RPC term, rear wheel speed.

**Claims 54-62** are objected to as being dependent on the objected independent claim 53.

Independent **claim 63** is objected to because it includes the limitation of a DRP entry point as a function of the vehicle speed that is not clearly defined. In the specification and drawings, the calculation of the DRP entry point is not further defined.

**Claims 64-71** are objected to as being dependent on the objected independent claim 63.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 5, 30, 34, 35, 43, 44, 46, 49 and 52 are rejected under 35 U.S.C. 102(b) as being anticipated by Atkins, US Patent No. 6,290,312.

(**Claims 1 and 30**) Atkins discloses a pump-less anti-lock brake apparatus (Column 1, lines 18-33 and 51-55) for controlling the rotational speed, during a braking cycle, of only the rear brakes of a vehicle (Column 1, lines 29-33) having at least one front and one rear wheel (figure 1) and front and rear brakes acting on the front and rear wheels respectively (figure 1, elements 19a,b and 20a,b), the apparatus comprising: a rear brake hydraulic circuit including a master cylinder for supplying a volume of

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pressurized brake fluid to the rear brakes during the braking cycle (master cylinder 14), a fluid storage element (accumulator 28), and a rear brake pressure control (RPC) apparatus (RWAL system 10); the RPC apparatus includes a hydraulic control unit (HCU) (anti-lock control valve 21) and an electrical control unit (ECU) (computer control module 30), with the HCU operatively connecting the master cylinder to the rear brakes and the fluid storage element for controlling fluid pressure applied to the rear brakes during the braking cycle and fluid flow to the fluid storage element (figure 1 and Column 1, lines 34-50), and the ECU operatively connected to the HCU for controlling the HCU (Column 1, lines 57-66) as a function of the rotational speeds of the at least one front and one rear wheel (Column 2, lines 6-10).

**(Claim 5)** Atkins further discloses wherein the ECU further controls the HCU as a function of the fluid flow to the fluid storage element during the braking cycle (Column 2, lines 6-32).

**(Claim 34)** Atkins further discloses wherein the HCU includes: a normally open apply valve (isolation valve 22) operatively connected to the ECU to be controlled thereby, and having an inlet connected to the master cylinder for receiving pressurized fluid therefrom and an output connected to the rear brakes (Column 1, lines 34-43 and figure 1); and a normally closed release valve (dump valve 26) operatively connected to the ECU to be controlled thereby, and having an inlet connected to the rear brakes for receiving fluid therefrom and an outlet connected to the fluid receiving element (Column 1, lines 43-50 and figure 1).

**(Claim 35)** Atkins further discloses wherein the fluid receiving unit is an accumulator disposed in the HCU (accumulator 28 and figure 1).

**(Claim 43)** Atkins discloses a method for controlling a rear brake hydraulic circuit having a fluid storage element (accumulator 28) and a master cylinder (master cylinder 14) supplying a volume of pressurized brake fluid to the rear brakes during the braking cycle in a pump-less anti-lock brake apparatus (Column 1, lines 18-33 and 51-55) controlling the rotational speeds, during a braking cycle, of only the rear brakes of a vehicle (Column 1, lines 29-33) having at least one front wheel, at least one rear wheel (figure 1), and front and rear brakes acting on the front and rear wheels respectively (figure 1, elements 19a,b and 20a,b), the method comprising: controlling fluid pressure and flow from the master cylinder applied to the rear brakes during the braking cycle and fluid flow to and from the fluid storage element as a function of the rotational speeds of at least one front and one rear wheel (Column 2, lines 6-10).

**(Claim 44)** Atkins further discloses the method comprising: blocking the flow of pressurized fluid to the fluid receiving element prior to detecting an impending lock up of the rear brakes (Column 2, lines 15-32); and controlling the fluid pressure in the rear brake circuit only after detecting an impending lock up of the rear brakes (Column 2, lines 15-32).

**(Claim 46)** Atkins further discloses controlling the fluid pressure applied to the rear brakes as a function of fluid flow to the fluid storage element during the braking cycle (Column 2, lines 6-32).

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**(Claim 49)** Atkins further discloses: connecting an inlet of a normally open apply valve (isolation valve 22) to the master cylinder for receiving pressurized fluid therefrom, and connecting an outlet of the normally open apply valve to the rear brakes (Column 1, lines 34-43 and figure 1); connecting an inlet of a normally closed release valve (dump valve 26) to the rear brakes for receiving fluid therefrom, and connecting an outlet of the normally closed release valve to the fluid receiving element (Column 1, lines 43-50 and figure 1); and controlling fluid pressure applied to the rear brakes during the braking cycle and fluid flow to and from the fluid storage element by selectively opening and closing the apply and release valves as a function of the rotational speeds of at least one front and one rear wheel (Column 1, lines 43-50 and Column 2, lines 6-32).

**Claim 52** is rejected under 35 U.S.C. 102(b) as being unpatentable over Atkins in view of the disclosed Background Of The Invention of the instant application.

Atkins discloses the method of claim 43 and further comprises inhibiting control of both the fluid pressure applied to the rear brakes during the braking cycle and the fluid flow to and from the fluid storage element (Column 2, lines 6-32) as a function of the rotational speeds of at least one front and one rear wheel (Column 2, lines 6-10).

Atkins does not explicitly disclose that the vehicle is operable in a four-wheel drive mode. Atkins does imply that the ABS type referred to can be used in a four-wheel drive system (Column 1, lines 51-55). However, more explicitly, the instant application teaches that the RWAL system similarly disclosed by Atkins is operable in a four-wheel drive mode.



***Allowable Subject Matter***

Claims 2-4, 6-29, 31-33, 36-42, 45, and 48 are objected to as being dependent upon a rejected base claim and are at present considered to overcome the prior art of record if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christine M. Behncke whose telephone number is (571) 272-8103. The examiner can normally be reached on Monday - Friday 8:30 AM - 5:30 PM.

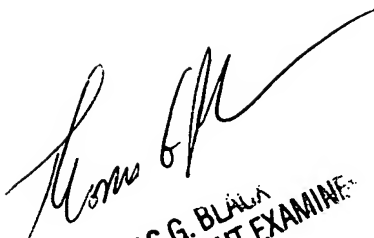
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas G. Black can be reached on (571) 272-6956. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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May 4, 2005

  
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